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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,736	03/30/2005	Zvika Gilad	P4463-US	1997

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EXAMINER
LEUBECKER, JOHN P

ART UNIT	PAPER NUMBER
3739	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,736	GILAD ET AL.	
	Examiner	Art Unit	
	John P. Leubecker	3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-7,9-22,26-31 and 34-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-7,9-11,13-22,26-31 and 34-40* is/are rejected.

7)☒ Claim(s) *12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 23, 2009 has been entered.

Claim Objections

2. Claim 9 is objected to because of the following informalities: claims 9 is an exact duplicate of claim 4. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 4, 6, 7, 9-11, 13-20 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Blumzvig et al. (US 2005/0267328).

Referring mainly to Figure 2, Blumzvig et al. disclose a first rigid circuit board (40) having disposed thereon an image sensor (24), said first circuit board having a top surface (surface accommodating image sensor 24) and a bottom surface (opposite the top surface), and a second rigid circuit board (41), said second circuit board being in electrical communication with the first circuit board (electrical communication is inherent due to the fact that LED 30, located on the second circuit board, necessarily is powered by energy supplied to the first circuit board) and extending at an angle of about 90° from the bottom surface of the first circuit board (Fig.2), said second circuit board having disposed thereon at least one illumination source (LED 30) illuminating in a direction substantially perpendicular to said second circuit board (illumination is directed along optical axis of lens 28, which is perpendicular to second circuit board 41). Since a circuit board (e.g., 41) is capable of accommodating electrical components, it is configured to accommodate any board component, including an ASIC and a transmitter. Both lens (28) and prism (38) constitute a light redirecting device and prism (38) is capable of redirecting light in a direction parallel to the second circuit board. Second circuit board (41) is rigidly attached ([0095]), such attachment constituting a attaching means. Interface chips (26) constitute circuitry for processing image signals.

5. Claim 26 is rejected under 35 U.S.C. 102(a) as being anticipated by Brune et al (U.S. Pat. 6,371,927).

Referring to Figures 5 and 7, Brune et al. discloses a rigid circuit board (23) extending in a longitudinal direction, a transmitter (9, Fig.2, and part of the circuit elements in which circuit board 23 supports, col.9, lines 11-17), and an antenna (25), said antenna substantially coiled

about the circuit board with a coil rotation axis parallel to the longitudinal direction (better shown in Fig.12 as antenna coil 76 in that figure is analogous to 25 in figures 5 and 7).

6. Claims 29 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Krill (U.S. Pat. 7,118,531).

Krill discloses a housing (11, Fig.1), accommodating an imager (ultrasonic transducers 12), a power source (15) which can be a battery (col.3, lines 26-29), and an antenna (not shown but inherent as part of transceiver 14, which is capable of two-way RF communications, col.2, lines 57-59) disposed within and spaced from the housing (Fig.1) and substantially between the power source and imager (Fig.1).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brune et al. in view of Marshall (U.S. Pat. 6,632,175).

Brune et al. disclose the device as described above including a sensor for sensing physiological parameters (col.5, lines 36-45), such as temperature, pH, and chemical constituents, but fails to go as far as stating that the sensor could be an imager. Marshall teaches

a capsule including a sensor for sensing physiological parameters (col.3, lines 45-49), such as temperature, pH and chemical constituents, but further suggests sensing images (col.3, lines 48-49, col.4, lines 54-56). It would have been obvious to one of ordinary skill in the art to have provided as the sensor in Brune et al., or in addition to the sensor of Brune et al., an image sensor since such is known in the art (Marshall being just one of numerous patents disclosing such) of capsule sensing devices, and such modification would increase the capabilities of the Brune et al. device by allowing different physiological data to be obtained.

9. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brune et al.

Brune et al. discloses the device as described above in which Figure 7 depicts possible positions of circuit elements on circuit board (23), including some being surrounded by the antenna. Brune et al. does not explicitly teach the relative arrangement of circuit elements (e.g., transmitter) on circuit board (23) nor attributes any significance to the relative arrangement such elements. Thus, the transmitter circuitry is either on the part of the circuit board that is surrounded by the antenna (in which case, Brune et al. would anticipate claim 28) or it is on the part of the circuit board that is not surrounded by the antenna, depending on choice of design and layout of the circuit board. Where there is a limited universe of potential options, the selection of any particular option would have been obvious to one of ordinary skill in the art. In re Jones, 412 F.2d 241, 162 USPQ 224 (CCPA 1969). Even if the transmitter circuitry is not surrounded by the antenna, it would have been obvious to have positioned the transmitter circuitry on the part of the circuit board that is surrounded by the antenna as a matter of choice of design and layout of the circuit board. One might be motivated to design it in such a way to position the

transmitter circuitry as close as possible to the antenna, eliminating excess transmission paths that are required to extend between those elements.

10. Claims 1, 4-7, 9-11, 13-20, 31 and 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gazdzinski (US 2002/0103417) in view of Nakashima (U.S. Pat. 6,533,722).

Referring mainly to Figure 5 and regarding claims 1, 13, 20 and 31, Gazdzinski discloses an optical window (306a,306b) behind which are disposed an illumination source (504), a first rigid circuit board (not numbered but shown as rectangular cross-hatched element to which the image sensor 402 is attached, Fig.5) and a second rigid circuit board (510, the one attached to the first circuit board) extending perpendicularly from the bottom of the first circuit board. The second circuit board is mechanically and electrically attached (e.g. attaching means) to the first circuit board (Fig.5) since the image sensor is electrically connected to the other components ([0049]). An LED illumination source (504) is disposed on the second circuit board. Gazdzinski does not indicate the direction of illumination of the LED (504) but to address Applicant's concerns[1], the Examiner will assume that the LED of Gazdzinski illuminates in a direction that is parallel to a lengthwise (or widthwise) direction of the circuit board[2]. Thus, Gazdzinski fails to disclose that the LED illuminates in a direction that is perpendicular to the circuit board on which it is disposed.

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[1] On page 8 of the remarks filed March 23, 2009, Applicant assumes the direction of illumination of LED (504) to be "substantially parallel to the circuit board" since Figure 5 of Gazdzinski possibly implies such direction. The amendments to claims 1, 13, 20 and 31 rely on such assumption.

[2] The Examiner clarifies this since the instant claims do not associate the illumination direction with any particular aspect or reference direction of the circuit board. Therefore, the LED (504) could be considered to be perpendicular to the circuit board in the thickness direction (or similarly, in the direction in which the major plane of the circuit board is facing). It is assumed that Applicant will amend the claims clearly point out which aspect of the circuit board the illumination direction is being compared.

However, one of ordinary skill in the mechanical/electrical arts would recognize that not all solid-state LEDs are mountable to a circuit board so as to emit light parallel with such circuit board but instead, some are mountable so as to emit light perpendicular to the board (note for example, Mizuno, U.S. Pat. 6,939,292, elements 3 and 5, Fig.1, col.3, lines 38-47). Furthermore, the alternative nature of mounting an LED to as to emit parallel and mounting an LED to emit perpendicular with redirection to the parallel direction with a light redirecting member has been recognized in the same art of endeavor. Nakashima teaches both alternative embodiments: wherein the LED (61, Fig.10) is mounted to the circuit board (11) so as to emit illumination parallel to the circuit board (which is the intended direction) and wherein LED (61, Fig.8) is mounted to the circuit board (11) so as to emit illumination perpendicular to the circuit board with prism (17) used to redirect light in the intended direction. Thus, there is evidence in the relevant art that mounting the illumination source to as to illuminate perpendicular to the circuit board and using a light redirecting member (e.g. prism) to redirect the illumination to its intended target is within the level of ordinary skill, has been contemplated in the endoscope art, and does not constitute "invention" over the prior art of record. Since Nakashima teaches an alternative illumination structure, intended for the same purpose, and for accomplishing the same result, it would have been obvious to one of ordinary skill in the art to have provided a perpendicularly emitting LED and light redirection member in Gazdzinski.

As to all other claims not addressed above, Gazdzinski discloses that the second circuit board includes image processing circuitry (512,514,520), which means it is capable of accommodating an ASIC and transmitter. Claims 34-40 are addressed above with respect to the

obviousness of using a light redirecting member to alter the direction of the illumination to be parallel to the second circuit board.

11. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gazdzinski in view of Nakashima and further in view of Brown et al. (U.S. Pat. 6,128,201).

Gazdzinski in view of Nakashima disclose the elements as described above with respect to claim 20. Although the circuit boards are connected at a 90 degree angle with respect to each other, there are no details in Gazdzinski as to the connection of the second circuit board (not numbered but shown as rectangular cross-hatched element to which the image sensor 402 is attached, Fig.5) and the first circuit board (510)[3]. Brown et al. is just one of numerous references that show that it is known to provide a socket or slot in one circuit board to accommodate the edge of another that is intended to be disposed perpendicular to the first. Note (719) and (727) of Figure 10 of Brown et al. Brown teaches that such slot/edge connection "facilitates accurate coupling" (col.9, lines 55-67) and skilled artisan would obviously recognize the mechanical advantage obtained over merely placing the edge of one circuit board in contact with the plane surface of the other. Therefore, in view of the teaching of Brown et al., it would have been obvious to one of ordinary skill in the art to have provided a slot in the second circuit board to accommodate the first circuit board for the reasons taught by Brown et al.

[3] Note that claims 20-22 refer to the first and second circuit boards oppositely from all other claims (i.e., the first circuit board of claims 20-22 is equivalent to the second circuit board of claim 1).

Allowable Subject Matter

12. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

13. Applicant's arguments filed March 23, 2009 have been fully considered but they are not persuasive.

Applicant's arguments are directed to how the claims, as now amended, define over the previous rejections made in the Final Office Action of December 23, 2008. These being taken into consideration along with the claim amendments, the rejections set forth above are proffered in response to such arguments.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Leubecker whose telephone number is (571) 272-4769. The examiner can normally be reached on Monday through Friday, 6:00 AM to 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C.M. Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John P. Leubecker/
Primary Examiner
Art Unit 3739

jpl